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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/763,645

01/22/2004

Jayati Ghosh

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AGILENT TECHNOLOGIES INC.
INTELLECTUAL PROPERTY ADMINISTRATION,LEGAL DEPT.
MS BLDG. E P.O. BOX 7599
LOVELAND, CO 80537

EXAMINER

STREGE, JOHN B

ART UNIT

PAPER NUMBER

2624

NOTIFICATION DATE

DELIVERY MODE

08/10/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPOPS.LEGAL@agilent.com

Office Action Summary	Application No. 10/763,645	Applicant(s) GHOSH ET AL.	
	Examiner JOHN B. STREGE	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 11 and 14-17 is/are rejected.
- 7) ☐ Claim(s) 6-8, and 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Examiner's Comment

The Examiner phoned the Attorney for this case several times and left messages to expedite the prosecution of this case, however the Attorney never responded to the messages thus necessitating the office action and the reopening of prosecution.

In view of the Appeal Brief filed on 04/16/09, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Bhavesh M Mehta/

Supervisory Patent Examiner, Art Unit 2624.

Response to Arguments

Applicant's arguments, see pages 7-19, filed 04/16/09 in the Appeal Brief, with respect to the claims have been fully considered and are persuasive. However, upon further consideration, a new grounds of rejection is made as set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5,9,11, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Wang et al. *Quantitative quality control in microarray image processing and data acquisition* (hereinafter "Wang").

Regarding claim 1, Wang discloses a method for classifying pixels of a microarray image with observed intensities within a region of interest (see at least the abstract and the first paragraph of the section labeled Matarray image processing and data acquisition procedure in the materials and methods) , the method comprising:

initially classifying pixels in the region of interest as either feature pixels or background pixels based on the intensities of the pixels (section labeled Matarray image processing and data acquisition procedure, first paragraph)

iteratively computing, for pixels within the region of interest, probabilities that the pixels are feature pixels and probabilities that the pixels are background pixels, based on pixel locations and intensities, and accordingly classifying the pixels as either feature

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pixels or background pixels (section labeled Matarray image processing and data acquisition procedure, first paragraph, algorithm that combines intensity and spatial locations, "To improve the positions of the grids, all pixels outside the circle and inside the patch are putatively categorized as local background of the spot and the mean and standard deviation (SD) of the intensity values are calculated. Pixels inside the circle that have an intensity value larger than its local background mean + 2 SD are considered as putative signal pixels and this information is used to calculate the new spot center. After new centers have been identified, the circular mask and patch is redefined for each spot and the local background is re-calculated. This iterative procedure to improve spot detection can be carried out repeatedly until it gives a satisfactory result and we have found that the performance improves quickly with each iteration; usually only two iterations are needed.")

Regarding claim 2, a feature pixel and background pixel classification is stored in a feature mask (see figure 1, circular masks are defined to separate the signal region from the background region).

Regarding claim 3, as seen in equation 5 for q_{sat} the output values are binary of being either one or zero and this is relatedd to the feature mask.

Regarding claim 4, Wang discloses wherein classifying pixels in the region of interest as either feature pixels or background pixels based on the observed intensities of the pixels further includes determining a high pixel intensity and a low pixel intensity for the region of interest; determining an intermediate point between the high pixel intensity and a low pixel intensity; classifying pixels with observed pixel intensities

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greater than or equal to the intermediate point as feature pixels and classifying pixels with observed pixel intensities less than the intermediate point as background pixels; and iteratively reclassifying pixels based on an intermediate intensity between the mean intensity of feature pixels and the mean intensity of background pixels (matarray image processing and data acquisition procedure).

Regarding claim 5, Wang discloses further including identifying hole pixels that are feature pixels surrounded by background pixels and background pixels surrounded by feature pixels and reclassifying hole pixels in order to increase continuity of feature-pixel and background-pixel classification with respect to location within the region of interest (see figure 1, and matarray image processing and data acquisition procedure).

Regarding claims 9 and 11, the method of Wang is carried out on a computer.

Regarding claim 14, Wang discloses a feature-extraction system comprising: a means for receiving and storing a scanned image of a microarray; a gridding means for determining putative feature positions and sizes within the scanned image of the microarray; feature-mask-generating logic that classifies pixels as feature-pixels and background-pixels based on pixel locations and intensities; preview-mode display logic that displays feature positions and sizes obtained from the generated feature mask, solicits feedback from a user, and corrects the feature positions and sizes; and a feature extraction module that extracts signal data from the scanned image of the microarray following user acceptance of initial feature locations and sizes displayed in preview mode (similar to the arguments used above for claim 1, Wang discloses all of

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the above limitations in the Matarray image processing and data acquisition procedure section).

Claim 15 is similarly analyzed to claim 1.

Claim 16 is similarly analyzed to claim 2.

Claim 17 is similarly analyzed to claim 4.

Allowable Subject Matter

Claims 6-8, and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN B. STREGE whose telephone number is (571)272-7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

/John Strege/
Primary Examiner
07/31/09